

MARYLAND INVENTORY OF HISTORIC BRIDGES  
HISTORIC BRIDGE INVENTORY  
MARYLAND STATE HIGHWAY ADMINISTRATION/  
MARYLAND HISTORICAL TRUST

MHT No. WI-221

SHA Bridge No. 22019 Bridge name: MD 354 over Adkin's Pond

**LOCATION:**

Street/Road name and number [facility carried] MD 354

City/town Powellville Vicinity \_\_\_\_\_

County Wicomico

This bridge projects over: Road      Railway      Water X      Land

Ownership: State X      County \_\_\_\_\_      Municipal \_\_\_\_\_      Other \_\_\_\_\_

**HISTORIC STATUS:**

Is bridge located within a designated historic district? Yes \_\_\_\_\_ No X

National Register-listed district \_\_\_\_\_ National Register-determined-eligible district \_\_\_\_\_

Locally-designated district \_\_\_\_\_ Other \_\_\_\_\_

Name of district \_\_\_\_\_

**BRIDGE TYPE:**

Timber Bridge \_\_\_\_\_:

Beam Bridge \_\_\_\_\_ Truss -Covered \_\_\_\_\_ Trestle \_\_\_\_\_ Timber-And-Concrete \_\_\_\_\_

Stone Arch Bridge \_\_\_\_\_

Metal Truss Bridge \_\_\_\_\_

Movable Bridge \_\_\_\_\_:

Swing \_\_\_\_\_ Bascule Single Leaf \_\_\_\_\_ Bascule Multiple Leaf \_\_\_\_\_

Vertical Lift \_\_\_\_\_ Retractable \_\_\_\_\_ Pontoon \_\_\_\_\_

Metal Girder \_\_\_\_\_:

Rolled Girder \_\_\_\_\_ Rolled Girder Concrete Encased \_\_\_\_\_

Plate Girder \_\_\_\_\_ Plate Girder Concrete Encased \_\_\_\_\_

Metal Suspension \_\_\_\_\_

Metal Arch \_\_\_\_\_

Metal Cantilever \_\_\_\_\_

Concrete X:

Concrete Arch \_\_\_\_\_ Concrete Slab X Concrete Beam \_\_\_\_\_ Rigid Frame \_\_\_\_\_

Other \_\_\_\_\_ Type Name \_\_\_\_\_

WF-221

**DESCRIPTION:**

**Setting:** Urban \_\_\_\_\_ Small Town \_\_\_\_\_ Rural X

**Describe Setting:** Bridge 22019 carries MD 354 over Adkin's Pond. The stream flows under the bridge in an easterly direction. The bridge sits on the edge of a mill pond approximately one quarter of a mile north of the crossroads community of Powellville. A 3-bay, one-story, frame cottage sits adjacent to the bridge. This structure used to be a store. Adjacent to the house is a small county park, with picnic tables and a fishing pier. Approximately fifty yards to the south is a second bridge which used to cross a mill spillway.

**Describe superstructure and substructure:**

Bridge No. 22019 is a single span concrete slab structure built in the 1930s. The length of the span is 20', and the total bridge length is 23'. The slab rests on concrete abutments. It has solid, decorated parapets and wing walls which run parallel with the road. The parapets feature molded rectangular panels and concrete capping stones; they are integral with the bridge. It is posted for 62,000 pounds Gross Vehicle Weight and 80,000 Gross Combination Weight.

**Discuss Major Alterations:**

Guardrails have been attached to the parapet walls.

**HISTORY:**

**WHEN was the bridge built** 1933

**This date is:** Actual X Estimated   

**Source of date:** Plaque \_\_\_\_\_ Design plans \_\_\_\_\_ County bridge files/inspection form \_\_\_\_\_

**Other (specify)**

State Highway files do not give a construction date. Two local residents stated the bridge was built to replace an earlier wooden structure which was destroyed in a hurricane in 1933.

**WHY was bridge built?**

The need for a more efficient transportation network and load capacity in the decades following World War I.

**WHO was the designer?**

This bridge was designed according to standard State specifications.

**WHO was the builder?**

State Highway Administration

**WHY was the bridge altered?**

Guardrails have been attached for safety reasons.

**Was the bridge built as part of an organized bridge-building campaign?**

As part of an effort by the State to increase load capacity on secondary roads during the 1930's

**SURVEYOR/HISTORIAN ANALYSIS:**

**This bridge may have National Register significance for its association with:**

**A - Events** \_\_\_\_\_ **B- Person** \_\_\_\_\_

**C- Engineering/architectural character** \_\_\_\_\_

**Was the bridge constructed in response to significant events in Maryland or local history?**

Reinforced concrete slab bridges are a twentieth century structure type, easily adapted to the need for expedient engineering solutions. Reinforced concrete technology developed rapidly in the early twentieth century with early recognition of the potential for standardized design. The first U.S. attempt to standardize concrete design specifications came in 1903-04 with the formation of the Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers.

Maryland's road and bridge improvement programs mirrored economic cycles. The first road improvement program of the State Roads Commission was a 7 year program, starting with the Commission's establishment in 1908 and ending in 1915. Due to World War I, the period from 1916 -1920 was one of relative inactivity; only roads of first priority were built. Truck traffic resulting from war-related factories and military installations generated new, heavy traffic unanticipated by the builders of the early road system. From 1920 to 1929, numerous highway improvements occurred in response to the increase in Maryland motor vehicles from 103,000 in 1920 to 320,000 in 1929, with emphasis on the secondary system of feeder roads which moved traffic from the primary roads built before World War I. After World War I, Maryland's bridge system also was appraised as too narrow and structurally inadequate for the increasing traffic, with plans for an expanded bridge program to be handled by the Bridge Division, set up in 1920. In 1920 under Chapter 508 of the Acts of 1920 the State issued a bond of \$3,000,000.00 for road construction; the primary purpose of these monies was to meet the state obligations involving the construction of rural post roads. The secondary purpose of these monies was to fund [with an equal sum from the counties] the building of lateral roads. The number of hard surfaced roads on the state system grew from 2000 in 1920 to 3200 in 1930. By 1930, Maryland's primary system had become inadequate to the huge freight trucks and volume of passenger cars in use, with major improvements occurring in the late 1930s. Most improvements to local roads waited until the years after World War II.

With a diverse topographical domain encompassing numerous small and large crossings, Maryland engineers quickly recognized the need for expedient design and construction.

In the early years, there was a need to replace the numerous single lane timber bridges. Walter Wilson Crosby, Chief Engineer stated in 1906, "The general plan has been to replace these [wood bridges] with pipe culverts or concrete bridges and thus forever do away with the further expense of the maintenance of expensive and dangerous wooden structures". Within a few years, readily constructed standardized bridges of concrete were being built throughout the state.

The creation of standard plans and a description of their use was first announced in the 1912-15 Reports of the State Roads Commission whereby bridges spanning up to 36 feet were to use standardized designs.

Published on a single sheet, the 1912 Standard Plans included those structures that were amenable to such an approach: slab spans, (deck) girder spans, box culverts, box bridges, abutments, and piers (State Roads Commission 1912). Slab spans, with lengths of 6 to 16 feet in two foot increments, featured a solid parapet that was integrated into the slab, with a roadway of 22 feet.

In the Report for the years 1916-1919, a revision of the standard plans was noted:

During the four years covered by this report, it has been found necessary to revise our standard plans for culverts and bridges, to take care of the increased tonnage which they have been forced to carry. Army cantonments...increased their operations several hundred per cent, and the brunt of the enormous truck traffic resulting therefrom, was borne by the State Roads of Maryland. In addition to these war activities, freight motor lines from Baltimore to Washington, Philadelphia, New York, and various points throughout Maryland, and the weight of many of these trucks when loaded, was in excess of the loads for which our early bridges were designed (State Roads Commission 1920:56).

Published on separate sheets, the new standard plans (State Roads Commission 1919) for slab bridges reveal that the major changes was an increase in roadway width from 22 feet to 24 feet and a redesign of the reinforcement. The slab spans continued to feature solid parapets integrated into the span. The range of span lengths remained 6 to 16 feet, but the next year (1920) witnessed the issue of a supplemental plan for a 20 foot long slab span (State Roads Commission 1920).

The 1924 standard plans remained in effect until 1930, when the roadway width for all standard plan bridges was increased to 27 feet in order to accommodate the increasing demands of automobile and truck traffic (State Roads Commission 1930). The range of span lengths remained the same, but there were some changes designed to increase load bearing capacities. The reinforcing bars were increased in thickness. Visually, the 1930 design can be distinguished from its predecessors by the pierced concrete railing that was introduced at this time.

Three years later, in 1933, a new set of standard plans was introduced (State Roads Commission 1933). This time, their preparation was not announced in the Report; new standard plans were by this time nothing special - they had indeed become standard. Once again accommodating the ever-increasing demands of traffic, the roadway width was increased, this time to 30 feet. The slab span's reinforcing bars remained the same diameter but were placed closer together to achieve still more load bearing capacity.

A system of standard nomenclature for plans was introduced at this time: span type was indicated by a two-letter designator followed by span length and the year of the plan. Thus, CS-18-33 indicates an 18 foot concrete slab of the 1933 standard plan design; CG-36-33 was a 36 foot concrete girder (T-beam) of the same year. The inclusion of the year designator gave ready access to design details for each bridge and indicates that the State Roads Commission anticipated revisions to standard plans.

**When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?**

According to local residents, Powellville was a well established mill community by the middle of the nineteenth century with a general store, a blacksmith, an undertaker and numerous residences. The complex of two bridges on present-day Md. Route 354 were built in conjunction with Adkin's Mill.

The larger bridge crossed the mill spillway and the smaller bridge crossed the mill race. It appears as if Powellville was already in decline by the time the concrete slab bridge was replaced shortly after the 1933 storm. Adkin's Mill closed at about this time and vitality of the

community thereafter began to ebb. It is unlikely therefore that the construction of Bridge No. 22019 had any appreciable impact on the growth or development of this area.

**Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?**

Powellville retains many of the characteristics of a nineteenth century crossroads community. It may, therefore, be eligible for historic designation. Bridge No. 22019, as part of a two bridge complex associated with the millpond, may add to the visual character of the potential district.

**Is the bridge a significant example of its type?**

No, this bridge is not a significant example of its type.

**Does the bridge retain integrity of important elements described in Context Addendum?**

The bridge has remained unaltered and in good condition.

**Is the bridge a significant example of the work of a manufacturer, designer and/or engineer?**

No, this is an undistinguished bridge built according to standardized plans.

**Should the bridge be given further study before an evaluation of its significance is made?**

No further study regarding the significance of the bridge is necessary.

#### **BIBLIOGRAPHY:**

State Highway Inspection files for Bridge No. 22019

Lake, Griffin, and Stevenson, 1877 Atlases and other Early Maps of the Eastern Shore of Maryland, Philadelphia, 1877.

Telephone conversation with Jim Miller, County Engineer for Wicomico County, August 11, 1995.

Interviews with Hilda Bunning, William Littleton, and Albert Jones who are longtime residents of Powellville.

#### **SURVEYOR/SURVEY INFORMATION:**

**Date bridge recorded:** 8/11/95

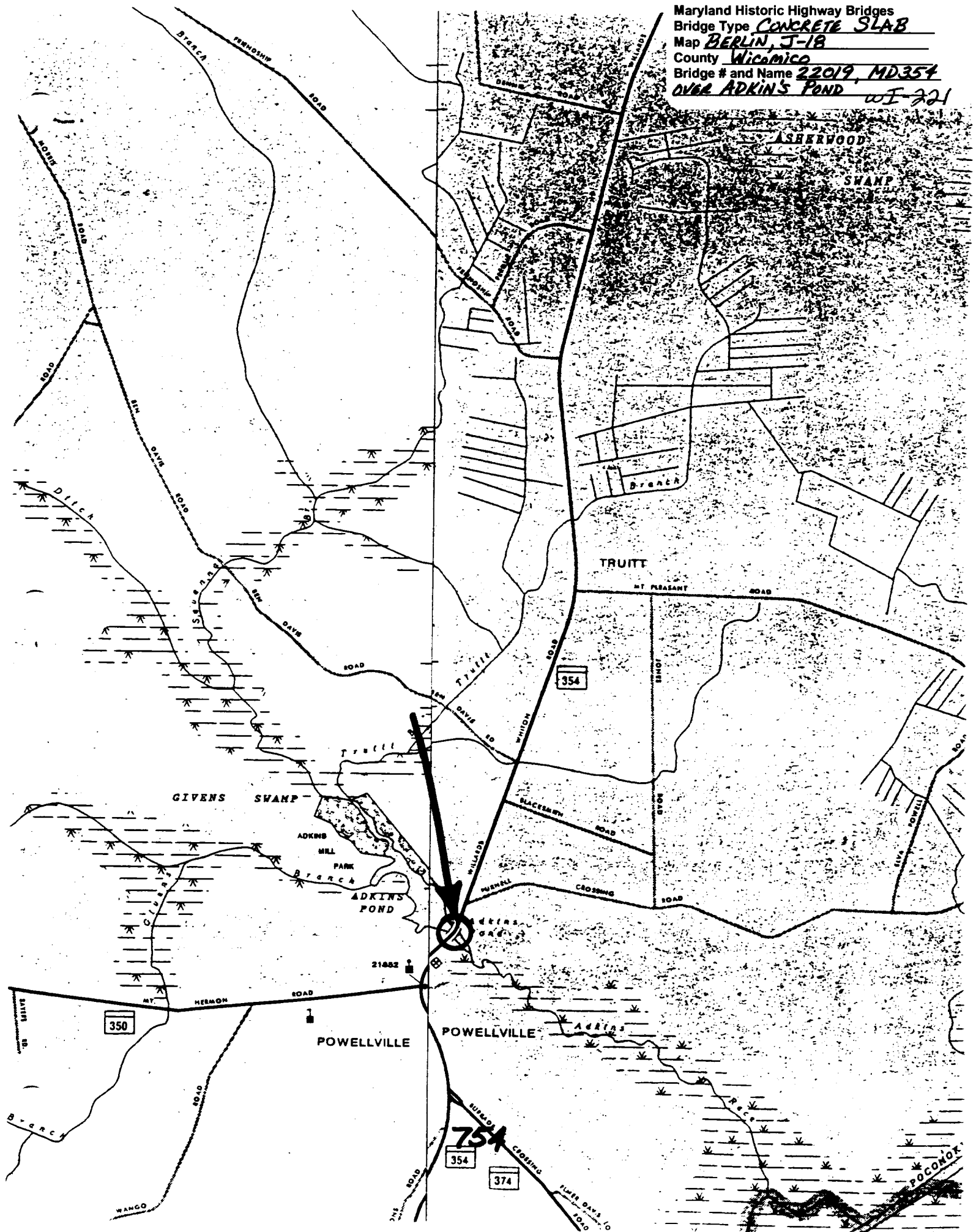
**Name of surveyor:** Daniel Moriarty

**Organization/Address:** P.A.C. Spero & Company, 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204

**Phone number:** 410-296-1635

**FAX number:** 410-296-1670

Maryland Historic Highway Bridges  
Bridge Type CONCRETE SLAB  
Map BERLIN, J-18  
County Wicomico  
Bridge # and Name 22019, MD354  
OVER ADKIN'S POND WI-721





WZ-221

WZ-221

WZ-221

WZ-221

WZ-221

WZ-221

WZ-221

1 of 4







WJ 221

WJ 221

WJ 221

WJ 221

WJ 221

WJ 221

3 of 4



W3-221

Waves

1/2" - 1/4"

1/2"

More with 1/2"

1/2" - 1/4" waves 1/2" - 1/4" waves 1/2" - 1/4"

2 1/2"

VI 224

Owner: SHA

**Tax Map Number:** N/A

Agency: SHA

Date N/AEligibility **not** recommended X

Considerations:   A     B     C     D     E     F     G   None

Is district listed? N/A no \_\_\_ yes Documentation on the property/district is presented in: Historic Bridge Inventory

This structure is not eligible for listing in the National Register individually as a bridge due to lack of integrity. Bridge No. 22019 (WI-221) is a 20-ft. simple span, concrete slab bridge with a concrete weir on the upstream end, built in 1930. The bridge is currently posted and does not accommodate dump trucks. This structure was evaluated in light of the criteria included in Historic Highway Bridges in Maryland: 1631-1960: Historic Context Report (1995). Although the CDE's, as discussed in on pp. C-60 and C-61, are present (slab, parapet, abutments and wing walls, and piers) these are in poor condition. The structure shows considerable cracking of the abutments, with efflorescence, with considerable cracking of the bridge parapet. The structure has had extensive gunnite repairs to the soffit edges and the centerline midspan, and exhibits many scour holes, and popouts, which have exposed rusty reinforcement steel.

Prepared by: SHA Architectural and Bridge Historian Rita M.Suffness,

**MARYLAND HISTORICAL TRUST REVIEW**

Eligibility recommended \_\_\_\_\_ Eligibility not recommended 2

Criteria:   A   B   C   D Considerations:   A   B   C   D   E   F   G   None

Comments: \_\_\_\_\_

Reviewer, Office of Preservation Services [Signature] Date 11/2/00

Reviewer, NR program [Signature] Date 11/16/00

**PRESERVATION VISION 2000; THE MARYLAND PLAN  
STATEWIDE HISTORIC CONTEXTS****I. Geographic Region:**

- ☒ Eastern Shore (all Eastern Shore counties, and Cecil)  
☐ Western Shore (Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)  
☐ Piedmont (Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)  
☐ Western Maryland (Allegany, Garrett and Washington)

**II. Chronological/Developmental Periods:**

- ☐ Rural Agrarian Intensification ☐ A.D. 1680-1815  
☐ Agricultural-Industrial Transition ☐ A.D. 1815-1870  
☐ Industrial/Urban Dominance ☐ A.D. 1870-1930  
☒ Modern Period ☒ A.D. 1930-Present  
☐ Unknown Period ( ☐ prehistoric ☐ historic)

**III. Historic Period Themes:**

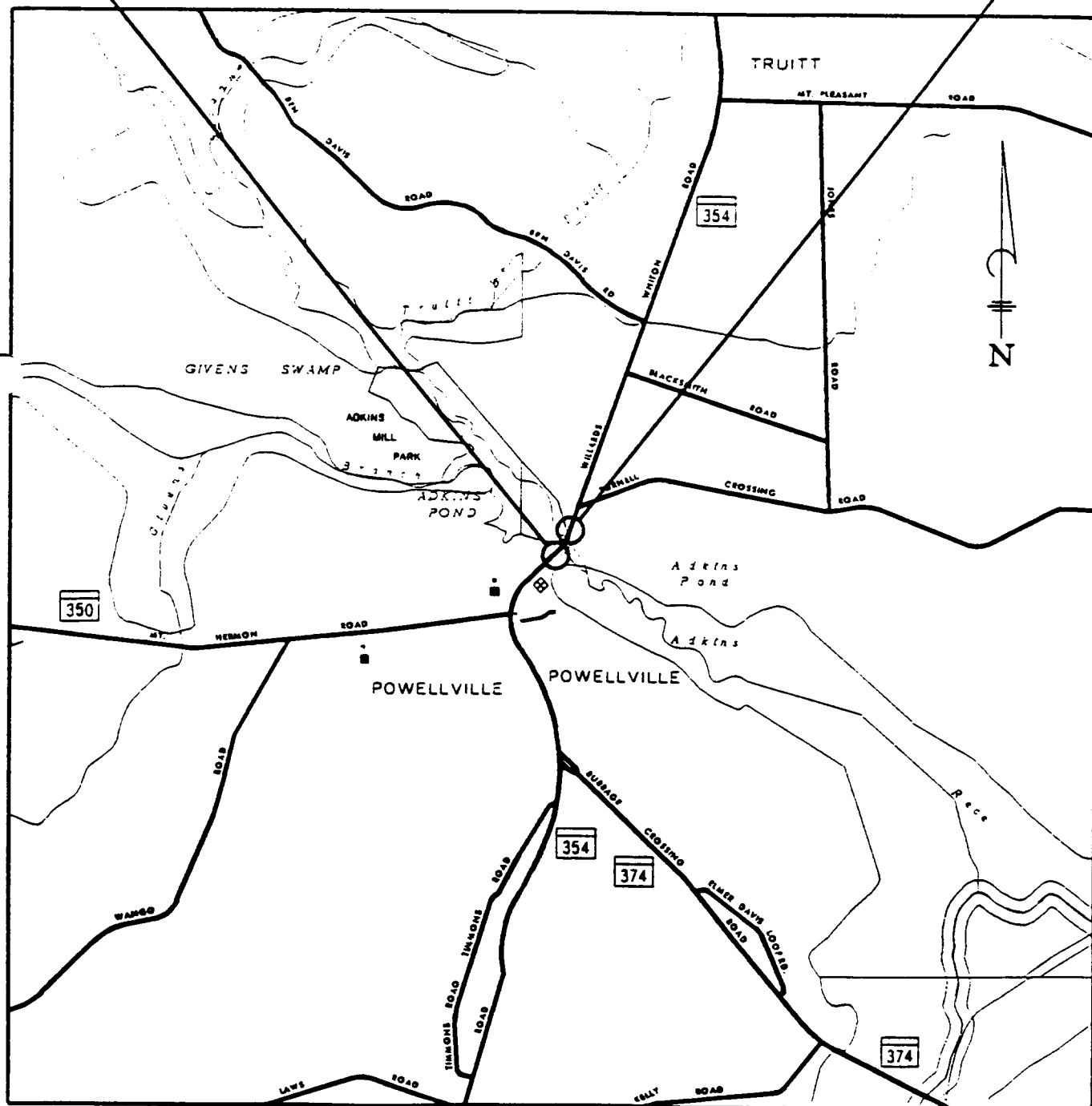
- ☐ Agriculture  
☐ Architecture, Landscape Architecture,  
and Community Planning  
☐ Economic (Commercial and Industrial)  
☐ Government/Law  
☐ Military  
☐ Religion  
☐ Social/Educational/Cultural  
☒ Transportation

**IV. Resource Type:**

Category: Structure  
Historic Environment: Rural  
Historic Function(s) and Use(s): Transportation  
Known Design Source: SHA

BRIDGE NO. 22020 ON  
MD 354 OVER ADKINS CREEK

WI 221  
BRIDGE NO. 22019 ON  
MD 354 OVER ADKINS CREEK



WICOMICO COUNTY

Ninepin Quad.



W 1-2-1

1/2 1/2 1/2

1/2 1/2 1/2

1/2 1/2 1/2

1/2 1/2 1/2

1/2 1/2 1/2

1/3



W1

Bridge 2201

10/10/10 10/10/10 10/10/10 10/10/10

MD SHA 10/10/10 10/10/10 10/10/10 10/10/10

Notes at MD SHA

W1 - file

2/3



W1-221

Bridge 22613

1110 E. Adams Rd.

MD SHA Bridge Engineer (G-1)

East Profile

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